

# AMATEUR RADIO



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**MARCH, 1935**

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# AMATEUR RADIO

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## Editorial ..

Has amateur radio an end? Can anyone in this wide world prophesy the "finis" of amateur radio?

What a gruesome way to start an editorial, but it is necessary to give "air" to what is to follow. For some time now, a new phase of radio has crept into the game—let us call it "radio politics." It is a game at which one, two, or a hundred men can play, by letter, verbally, or by magazine publicity. The latter course has been chosen by some of our overseas friends. In Australia we have had, and we probably still have, misunderstandings and differences between men and States concerning our activities; but we never have to consume valuable pages of a magazine that has a big overseas market to give air to our troubles to uninterested foreigners. We know they are not interested, and that they would consider, just as we do, that domestic strifes should stay in their proper place. Those of us who favor buying certain publications do so for the sake of the dope they contain, and not to learn the art of "typewriter politics." Such things are to be looked upon as wasted pages, and will eventually cause the doom of amateur radio. Such controversies are not only unnecessary, but harmful to the spirit of amateur radio, because of their psychological effect, and the things they put into many a Ham's mind. We should be out for the betterment of Ham radio conditions, and a fat chance we have of doing so whilst local squabbles are being circulated throughout the world. Obviously, some men love to see their own thoughts in big print, instead of putting on their hats and making personal contact with their adversaries. Penmanship is a safe method of speech when one wants to continue a life-long debate, because, by its use, one can always easily evade an issue. Thank heavens, "radio politics" has never become a serious side of our hobby, and let us fondly hope that the W.I.A. will always be strong enough to fight it off. You can rest assured that "Amateur Radio" will never be-

come the happy hunting ground for any typewriter politician.

The RST system is a failure. It is very unfortunate, because our English and American contemporaries made a bold effort to modernise Ham signal reporting procedure some time back. However, the system has met with disapproval because of its certain disadvantages, and scarcely 1 per cent. of the Hams are attracted by it. The amateur customs and traditions are hard to shift, especially when an innovation is suddenly sprung upon the gang like RST was. What is to be done? When it is all boiled down, we only want a better "tone" system. The W.I.A. took steps years ago, through the R.S.G.B., but the RST style was favored by the time the matter was given consideration. Let us hope a more sensible system will be evolved.

This issue of "Amateur Radio" is largely devoted to Centenary Contest results. The usual technical articles have been put to one side for this purpose, but will again be in full swing next print. Many requests were made by the overseas Hams for copies of this magazine, and elsewhere in this issue we have listed the foreign subscription as eight shillings, Australian currency. We would appreciate periodical notes from all quarters as well as station descriptions. To get back to the opening sentence; a page or so further over will be found all the details, scores, and photos, of the participating stations. It is felt, however, that many more countries actually participated, but failed to submit logs. To receive support from 50 per cent. of the world's countries is something to be proud of really, and the honest demands for a repeat are so numerous that we cannot fail to comply. However, our ZL friends have been invited to join in next October and make the contest a combined one of ZL-VK working the world. The fun will be greater for all, and should make a contest of this type more interesting. Consideration will also be given to the working hours, and to the power question. At the same time, the principle of the test will be the same, with the added advantage that there will be more stations in Oceania to contact. Early publicity will be given once more to this Southern Oceanic contest. It will be in October, as before—watch out for further announcements, gang!

## Centenary Contest Results

### Announcing another Test, October 1935

By VK3ML, Manager Contest Committee.

"CQ DX CENT," "CQ VK CENT," have ceased flashing across the world, to lie dormant for 100 years. Never again during our stay on this ethereal surrounded planet of ours will we be able to witness another gigantic and mighty successful Centenary contest run by the W.I.A. When we recline in the old lead box, keying horizontally with the left foot, perhaps those will-be Hams of to-morrow, a few feet above us, will be viewing one another's faces, per medium of television and micro waves. But, why worry about the next age? We lived for the moment during those thrilling four week-ends in October last, and got the kick of a lifetime; long to live in the minds of many participants. The contest committee may have had to work hard, but it was rewarded by the happy words of praise from Hams in 50 countries of the world. To know a job is done, and is successful in the minds of the majority, is man's richest reward. We find it hard to express our gratitude to those who helped the Aussies make the Centenary Contest an undeniable success. Many thanks, OM's, and the same goes to all the societies who spared no effort nor expense in giving our show the publicity it received.

Our special word of praise must be handed to the Australian firms who most generously donated awards of outstanding value: To Messrs. Amalgamated Wireless Valve Company Ltd., Philips Lamps Ltd., and Siemens Bros. Ltd., was due one of the major factors governing the success of the contest—the spirit of inducement. The Ham spirit is hard to kill at any time, but, without the wonderful co-operation that our donors gave us, the Centenary Contest may have proved a trifle too strenuous for many. But to see a goal in the form of a string of tubes and meters was enough to stimulate any Ham's heart.

By the time the large blue pencil was wielded over all the logs, the position, as first appeared, changed appreciably. Aided by a measured map, cross checking logs, and a set of the rules, the committee had to rule many blue lines through the logs.

Several disqualifications were made because of non-adherence to the rules, and then again a number received more points than they originally claimed. Modest boys! The battle was between VK3MR and VK3GQ for the first place on the Australian list. After check upon check, VK3MR proved the hero of the Contest. When all logs were totalled, and the power inputs divided into the totals, VK3HL showed himself to be the outright winner of the handicap section. Heartiest congratulations are extended to all winning participants throughout the Contest by the Council of the Victorian Division.

The prize-winners on the VK list are as follow:—First, VK3MR, with 100,320 points, wins the RCA 852 donated by Amalgamated Wireless Valve Co. Ltd.; second, VK3GQ, with 97,218 points, is awarded the set of Siemens meters; and VK3JQ filled third place with 56,666 points, and wins the RCA 800 presented again by the A.W.A. Co. Ltd. VK3HL, with the astounding score of 40,181, obtained with 23 watts, representing 1747 pts. per watt, outrightly wins Messrs. Philips Lamps Ltd. array of transmitting tubes for the handicap section. VKPTH, otherwise Mr. F. T. Hine, of Campsie, N.S.W., put up the best effort in the world in the receiving contest.

VE5BI was voted the best station description after many re-reading sessions on the committee's part.

Outstanding scores on the part of the overseas gang were:—G2ZQ, with 3850; J2GX, with 3414; PAOAZ, 4908; VE5BI, 2256; W6CXW, 7854; closely followed by W9TB and W9FM and D4BAR, with 5400 points.

## Australian Station Logs

DE 2409 F	292
DE 2454 V	258
DE 1231 C	232
DE 1971 C	56

### Open Section.

First—VK3MR	100,320 points
Second—VK3GQ	97,218 points
Third—VK3JQ	56,666 points

### Handicap Section.

Winner—VK3HL 40,181 points with 23 watts, equalling 1747 points per watt.

VK4BB	53,097	VK3HG	3,572
VK2LZ	48,488	VK2BP	3,490
VK7RC	43,076	VK7KV	3,240
VK3KX	43,010	VK3DM	3,144
VK3HL	40,181	VK4UU	2,933
VK4EI	37,980	VK3ML	2,244
VK2ZC	32,004	VK6FM	2,160
VK3HK	26,163	VK3BW	2,040
VK3JJ	23,809	VK2EL	1,590
VK2ER	17,157	VK5MZ	1,480
VK7JB	16,860	VK5FM	1,463
VK2HY	15,050	VK2QN	1,430
VK6SA	14,475	VK2RK	1,233
VK2AE	13,660	VK3VW	1,040
VK2KB	12,328	VK3PG	1,020
VK2OJ	11,074	VK2FX	1,002
VK2WJ	10,548	VK5HG	720
VK3BQ	10,222	VK3YO	720
VK2XC	9,924	VK4RY	686
VK5WP	8,720	VK2RG	648
VK2CS	8,638	VK3UH	616
VK3RJ	8,177	VK3JO	525
VK4GK	8,095	VK6CP	432
VK5MY	7,524	VK2BX	306
VK5RX	7,248	VK2WH	276
VK6MN	5,505	VK7CK	195
VK5XU	5,320	VK2YT	172
VK3OX	5,250	VK5RT	110
VK2KJ	5,190	VK3RX	75
VK2XV	3,991	VK5WR	66
VK2DR	3,984	VK2FZ	51
VK4US	3,624	VK3LQ	5

### Receiving Stations.

#### Australian.

VKPTH, N.S.W.	70,633
BERS, 195, S.A.	48,416
C. M. Howie, S.A.	8,190

#### Foreign.

Austria—	
OE.59	950
Holland—	
PA.R 171	2050
PA.R 242	1950
France—	
REF 2230	120
U.S.A.—	
J. McCarley	9
England—	
BRS 250	6150
BRS 1492	4554
2BWP	3600
BRS 1213	3500
BRS 1399	360
BRS 822	120
Germany—	
DE 1836 R	5202
DE 1857 J	3768
DE 1818 I	2950
DE 2220 I	1830
DE 1729 U	1800
DE 1555 D	980
DE 2161 J	944
DE 1943 H	868
DE 1616 M	820
DE 2194 V	804
DE 2089 H	540
DE 1872 U	480
DE 2322 F	456
DE 2192 P	404
DE 2078 K	351
DE 2327 M	296

## From Here and There

VK3MR worked 38 countries, VK3GQ 36, VK3JQ 29, and VK3HL 23. From W9FM, VK7RC, and a few others were loud enough to throw the milliamp needle (detector plate current) up to .6 millamp. with each dot and dash. ZE1JO says: "The VK's sure meant business." G2YL: "Hope the contest will be an annual one." W5VV: "Please make the contest an annual one; can't stay for the next Centenary." VK2EL says he has one 852, but would like another for P.P., hi! XLA1Y worked with less than 3 watts input to his CC rig. VK3OC reported him R7/8 on occasions. MX2A. was the only station heard from Manchoukuo. He is the only one licensed there, of course W9FM turned out a magnificently got-up log. D4BIU remarks that there is a gap on the band for VK's between 7150 and 7250 kcs. X1AM put an R8 sig. into VK with an indoor aerial. ZS5U uses 8 watts. Best VK's at W9FLH were VK7RC and VK2DA. W1SZ worked 'em one after the other. VS6AH passes a word of appreciation of a tip-top contest. From G5YG: "99 per cent. of the VK signals left nothing to be desired in quality." G15NJ: "Quite like old days to hear so many VK's." OE1ER got 480 pts. with 10 watts. Best time for VK-ZS contacts on 14 mc. is from 0400-0800 GMT according to ZS1H. W8FGA says VK3ML and VK7RC were best VK's heard there. W5BCW uses an aerial 600 ft. long, hi! G6HP is the lad who uses an O-V-O receiver. The D's favor EC-MOPA in about 95 per cent. cases. Very few superhets in Europe; no wonder they complain of TRM. The G's are supporters of the TRF and O-V-1 receivers, too. PK2KO put kilowatts in to milliwatts out; conditions rotten. The South Africans experienced QRN; six men were killed a night during the lightning storms, hi! W9TB uses 7 stages in the CC rig (more than one for each Continent, hi!). W2ESZ, W9FLH, VK2AE, G6RB, and hundreds of others want another contest. WELL, IT'S COMING GANG — NEXT OCTOBER!

We have sought out some interesting statistics from the logs. A handful of them gave the following:—

210 stations sitting on the key at once would draw 35,973 watts of final amp. plate power! Of those 210, 168 use CC, 22 prefer SE, and 20 MOPA. 130 of them chose Zepps, 51 S.W.F. Hertz, 7 doublets, 12 end fed Hertz, 7 Marconi, 1 indoor, 1 600 footer, and 1 260 ditto.

Then, again, 84 use TRF, 64 superhets, 38 det. and audio, 22 det. and 2 audio, 1 det. and 3 audio, and 1, i.e., G6HP, likes just the one too. The average of the 210 chaps gave an input power of 171 watts per man, thanks to several kilowatt merchants from the U.S.A.

Not quite as much can be said of the receiving contest as of the transmitting section. Mr. J. McCarley, of U.S.A., lost all points but 9 for not recording the serial numbers heard. The greatest support came from the G's and the D's. The Germans held a little contest of their own, which proved successful.

## German Report of the Event

By D4BUF.

Comin' along from the Saturday's work, takin' a quick dinner, and then . . . sitting before the "revver" listening for our Australian friends to catch 'em for the peaceful war of meeting them in the air for that Centenary Contest of the W.I.A. . . . such were the week-ends of the participating Hams in Germany and other countries the whole world over.

The weak whistles of the Hams far away were to search out of the enormous European QRM, of that rotten so-called "telephony," each one of such stations covering half the band with its poor, tormented waves, as Uncle Heaviside permitted local transmitters as well as this desired DX comin' through at same time.

Ditt ditt ditt dah—dah ditt dah—clicked our keys or bugs, the relays followed this rhythm, the filter condensers and chokes sung the same melody—ditt ditt ditt dah — dah ditt dah. . . .

The antenna had to blow the high frequency of the transmitter towards Australia, but often the Ham far away preferred listening to a stronger whistle, and the poor competitor here had to try his luck again by another

call. . . . So the Centenary Contest was the most thrilling event of this autumn.

Think that European Hams got the better part of the test! They got the day-time for work, while the operators of VK had to loose their nights for participation. The surprising fact of the contest is that it is possible to contact Australia nearly the whole European day . . . the 7 mc. band being the most consistent one for that; some hours between 1200 and 1600 GMT being reserved for 14 mc. work.

We think to speak with all participants of that event when we may advise you, VK3ML, manager of the contest:—"Thou ought to repeat that event every year!"

Possible that the name has to be changed; we think a centenary to be only once in a hundred years, hi! Well, the international ARRL contest IS a thrilling event but in Europe, working U.S.A. is a traffic round the corner, but Europe-Australia — that is real DX; it is difficult, it has the thrill and excitement of real short wave long distance traffic. And the system of scoring was found very nice, the week-ends being available for every Ham to participate. . . .

It was a specially good idea to give our listeners, those young people without a licence, the possibility of participation. We got some very enthusiastic letters of the DE's, who forgot meals and sleep, armed with a good receiver and tobacco pipe only, picking up the signals of VK. . . .

## Foreign Station Log

CT1ED . . .	495	G5YG . . .	2200
EA1AE . . .	280	G15NJ . . .	198
E1IB . . .	705	G16YW . . .	40
E1BF . . .	120	HB9AT . . .	162
F8RJ . . .	240	HB9J . . .	18
F8GG . . .	150	11ER . . .	20
F8FC . . .	120	J2GX . . .	3414
F8VT . . .	80	J2JJ . . .	2898
G2ZQ . . .	3850	J3DP . . .	1692
G6CJ . . .	3400	LA3C . . .	10
G6RB . . .	2300	LY1J . . .	189
G6HP . . .	1150	MX2A . . .	6
G2OA . . .	760	OE1ER . . .	480
G2YL . . .	640	OE3WB . . .	40
G6XQ . . .	600	OH3NP . . .	504
G2IO . . .	400	OK2OP . . .	1445
G2WQ . . .	300	OK1AW . . .	36
G5BD . . .	210	ON4RX . . .	680
G6WY . . .	210	ON4MY . . .	120
G2EM . . .	180	PA0AZ . . .	4908
G2TR . . .	20	PA0DC . . .	1850
G6OJ . . .	60	PA0XF . . .	452
G6ZJ . . .	30	PA0YS . . .	180
G5DS . . .	20	PA0JMW . . .	80
G2XC . . .	10	PA0QL . . .	36



PA0DA	10	W6WQ	14
PA0XR	10	W6KFZ	8
PK3ST	2616	W7DVF	1998
PK3LC	2130	W7OHT	72
PK1HD	1086	W8ZY	5784
PK1VH	924	W8BTI	5040
PK1CI	756	W8DQN	2250
PK3KO	140	W8PGA	1980
PK4RM	44	W8DGI	1752
SU1EC	3360	W8DED	1146
T12KF	36	W8EUY	1050
V8AF	655	W8GQU	544
V8AB	460	W8KOL	420
VE5BI	2256	W8AQ	400
VE3WA	364	W8KVX	400
VE4IG	243	W8BDG	360
VE4RO	192	W8AAT	300
VE5HP	140	W8KC	162
VE2HG	10	W8UV	100
VF3AM	8	W9TB	7104
VQ4CRL	1785	W9FM	6000
V85AC	1464	W9J	2444
V86AH	6566	W9ASV	2790
V86AQ	5658	W9AFN	945
V87GJ	315	W9MRW	770
VU2FY	2070	W9FLH	710
VU2DF	116	W9JFB	525
VU2LJ	18	W9KA	504
W1SZ	1500	W9JYZ	256
W1HUG	546	W9AIW	252
W1GDI	80	W9BIB	138
W1EPC	10	W9NBM	36
W2AIW	1350	W9LL	18
W2BSR	1045	W9LW	9
W2DEW	900	X1AM	392
W2FLG	330	XLAIY	180
W2GSN	183	YM4ZO	210
W2CC	180	ZE1JO	530
W2DVO	180	ZL2FR	912
W2AFB	180	ZL1DV	414
W2EUF	160	ZL3BY	360
W2FJG	60	ZL2QM	39
W2ESZ	40	ZS1H	1446
W3BES	3720	ZT6X	512
W3ANH	2226	ZT5R	188
W3CXG	1206	ZS5U	96
W3EVW	630	ZR6V	72
W3EB	324	ZR5Z	44
W1DUK	80	ZU6P	34
W3APC	134	D4BAR	5400
W3COP	126	D4BDR	1715
W4AJX	4884	D4CAF	1362
W4BGG	675	D4BIU	1265
W4AJY	432	D4BUP	1030
W4CEN	195	D4BBK	195
W4DAC	108	D4BMJ	66
W5UX	2730	D4BER	66
W5AFV	1380	D4BEU	64
W5EHM	900	D4BHR	36
W5ASG	685	D4BKK	20
W5BB	279	D4BOG	18
W5BCW	180	D4CNF	10
W5CAN	128	D4BLU	10
W6CXW	7854	D4BGA	9
W6TI	2912	D4BDF	9
W6ANN	846	D4BMK	9
W6JOE	336	D4BJU	9
W6KBD	189	D4BHH	9
W6IWS	168	D4CIF	9

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Wind. 1605, W 5160.

### SILENT KEY

We regret to announce that  
Hd. Price, G6HP, was electro-  
cuted on February 19th. He was  
an engineer attached to an exper-  
imental television station and acci-  
dentally contacted the 7000 volt  
supply.

## Winning Station Description

### VE 5BI

The origin of Ve5BI may be dated back to the good(?) old days of spark, when the author owned and operated station 4BY at Edmonton, Alberta, Canada. From this evolved, at a later date, station C5BG at Vancouver, B.C., when the author operated this (as was then thought) most modern and up-to-date station, consisting of a single 203 type tube in a Hartley circuit, a much remembered feature of which was the "mountains" of old "B" batteries which were used as plate

voltage final plate, and filter choke, are bolted on back of this panel.

The second panel, bottom half, carries final milliammeter for final plate current, upper half carries, left to right, oscillator/buffer doubler filament voltmeter, buffer/doubler milliammeter, and final voltmeter (filament). Rear of this panel carries osc./doubler/buffer power supply, and grid blocking keying power supply.

The third panel from bottom carries, left to right, crystal oscillator



VE 5BI

1. 1935 Transmitter

2. Good Old Days-1920

3. SSS Receiver

supply; a receiver was used then which was the author's pride—it actually had an RF stage on it.

From 1927 on many changes were made, until the material for the present lay-out was obtained, which, in its present form has been in operation for the past two years.

The complete transmitter, with its power supplies, is built on one 69 inch standard relay rack; this was made of 3 in. x 1½ in. quarter angle iron, panel being of ½ inch iron faced with 28 gauge galvaneel, this being finished in black.

Enclosed picture shows front of transmitter panel, meters, etc. Bottom panel contains line voltmeter, relay which cuts in primary of high voltage transformer when oscillator is switched on, can be seen to left of meter on this panel, 866 rectifiers are mounted directly above line voltmeter. All power transformers, for filament of final, filament of rectifiers, high

tuning control, plug-in crystal holder, and 1st doubler tuning control; on top half of this panel is meter for reading either crystal or 1st doubler plate current, with circuit switch just below meter. Behind this panel are mounted crystal oscillator and 1st doubler, with associated circuits.

The fourth panel from bottom carries only buffer (40) or 2nd doubler (20); this consists of one 46 type tube operated at 400 volts 30 MA., and gives ample excitation, either as buffer or doubler, to excite the final up to 400 watts input; coil for this stage is designed to cover both 20 and 40 band without changing.

Top panel carries, left to right, antenna tuning, tank tuning, with final grid milliammeter above; behind this panel is mounted the final stage, which consists of two type 211 tubes in push-pull, with associated circuits, all coupling is capacity, with plate series fed on all stages.

The single wire fed impedance matched type antenna, is coupled to final through a separate pp. tank; much better results were obtained this way than the usual method of clipping antenna directly on tank coil. Antenna ammeter can be seen to the upper left of panel; mounting of this meter on panel was avoided, due to losses when in proximity of metal panel.

Antenna tank is so designed as to tune both 40 and 20 without changing coils; no losses were found to occur by doing this, as antenna seems to function better with hi-C for 40 and lo-C for 20 bands.

Transmitter was designed particularly for 20 and 40 meter bands, to enable operator to make quick changes from either of these bands. This is obtained very satisfactorily, as there is only one coil to change (final tank coil), which is mounted on G.R. plugs.

To change bands it is only necessary to change final tank coil and re-set antenna and tank tuning; also buffer/doubler dial.

Band change in this way can be made in less than three minutes, while if crystal is also changed it is only necessary to also re-set oscillator and 1st doubler dials.

Voltage regulation of all power supplies is obtained by means of auto-transformers in primary; by this means the final input can be varied from 250 to 400 watts, and also line variations of filaments can be compensated for.

Complete transmitter and rack was designed and built by the author some two years ago, and has given real service since that time. And it has seen some real work during the U.S. DX contests and the latest VK DX test. Might also say that, with exception of tubes and high voltage transformer, there is not a piece of factory made transmitting apparatus in it, necessity being the mother of invention in this case.

The receiver, which was formerly a 9-valve super, was redesigned about one year ago into a S.S. type super, with optional automatic volume control for fone reception, and now consists of:—

58 type tube rf. (tuned gang with 1st det.), 224A 1st det., 224A hf. oscillator, crystal filter and three stages of 465 kc. If. using 58 type tubes, 2B7 2nd det. and A.V.C. and 2A5

audio; for CW reception, a 224A ec. oscillator 465 kc. is used.

Rf. and 1st det. are ganged; oscillator is separate, with small shunt condenser for band spread, which gives 90 degree spread on 40 and 20 bands. All controls are mounted on front panel, while coils are quickly and easily changed, being mounted on top at front of chassis.

An electron coupled frequency meter, A.C. operated, can be seen in picture at right, while a small battery self-contained monitor is placed in top left-hand drawer of desk.

Station location is literally "on the shores of English Bay," and is a good location for Western DX for transmitting; noise level is bad for DX reception, however, from 'autos' and commercial apparatus in vicinity. This is where the crystal receiver proved its worth to the author; it is in this location really of more value in cutting through power QRM than for selectivity, since the receiver without crystal has good selectivity. However, a fair share of DX is heard and worked on both 20 and 40 bands; the big ambition at present is to contact Africa, this being the elusive Continent here (this is easily proven by the fact that, as yet, no Ve5 station has made a WAC), with possible exception of stations in the North-west, Yukon, etc.

Ve5BI is not a traffic station, the biggest thrill here being contacting (or trying to contact) DX. The DX tests are looked forward to as the event of the year.

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Guaranteed to be cut properly with regard to the Optic axis.

200 Mx, 160 Mx, 80 Mx, £1.

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# Amateur Radio



1. PK 1CI. 2. PK 1CI. 3. W 8ZY. 4. W 8ZY. 5. W 2CC  
7. W 6CXW 8. VU 2FY 9. W 2CC

6 W 6CXW.

## LONG-LOOKED-FOR MIDGET VALVE.

One of the most interesting valves we have yet had the pleasure of handling is now available from Amalgamated Wireless Valve Co. Ltd. The Melbourne representative, Mr. S. Haworth, has kindly given us the characteristics of the new Acorn Type Radiotron 955. This little midget, the smallest transmitting valve yet released, is not as big as the top of one's thumb, and examination shows it is made with the meticulous attention to detail so characteristic of Radiotron engineers.

The R.C.A. 955 Detector, Amplifier, Oscillator (Acorn Type) is a heater type of triode designed primarily for radio amateurs and experimenters working with wavelengths between 0.5 meter and 5 meters. Operation at

these short wavelengths is made possible by means of an unconventional tube structure having small size, close electrode spacing, and short terminal connections.

### Tentative Characteristics.

Heater Voltage (A.C. or D.C.) . . . . .	6.3 volts
Heater Current . . . . .	0.16 ampere
Amplification Factor . . . . .	25
Grid-Plate Capacitance . . . . .	1.4 uuf
Grid-Cathode Capacitance . . . . .	1.0 uuf
Plate-Cathode Capacitance . . . . .	0.6 uuf
Maximum Overall Length . . . . .	1 3-8 in.
Maximum Diameter (with terminals) . . . . .	1 3-16 in.
Terminal Mounting . . . . .	Special

Further particulars will appear in the next issue of "Amateur Radio."

## Wanted to Sell—

### ONE WOODEN WIRELESS MAST

complete with all necessary stay wires, insulators, etc. ready for erection. In three sections 35ft : 7in. x 7in.; 30ft : 6in. x 6in.; 28ft : 5in. x 5.; Oregon. Total height when erected 85ft.

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## Station Descriptions

### VK 3GQ

VK3GQ has been on the air since December, 1932. The first two months were the only time that self-excited master oscillator control has been used, the junior B.E.R.U. contest in 1933 prompting the installation of xtal control.

The original transmitter was a 3-stage M.O. job with 171A Hartley, 45 buffer—f.d., and p.p. 47's p.a., with about 18 watts input. Using this rig, all continents were worked in the first five weeks of operation, the majority of DX QSO's being on 14 mc.

though this figure was never used for working.

The driver stages were later rebuilt, and the rig was changed to a 3-stage job with 24 e.c.c.o., and 46 buffer fd. In January, 1934, the 5-stage rig owned by the late VK3BG was installed, and was used for R.A.A.F.W.R. work. This is a relatively high power job, with 47 co., 45 buffer, 47 fd. (when required), 210 driver, and 211 final. The power supplies consist of "C" bias, B/C power pack for first three stages, and a



1. Transmitter



2. Receiver

The first 3 QSO's were with J stations, and then ZL2JA was contacted, before the first VK QSO was made with "Mac," of VK2MY.

It was not until Xtal control was installed that 7 mc. dx became very thick, but the first night on which the xtal gear was tested, five W stations were contacted in succession. Since then over 50 countries have been worked, and over 1500 contacts have been established.

The first xtal rig was a 5-stage job with A409 c.o., B406 buffer, 47 f.d., 45 buffer f.d., and pp. 47's in pa. With a few changes to the first four stages, including the use of 24's as fd's, the original pa was used until November, 1933, when the 47's were replaced by E406 Philips tubes. These tubes proved much easier to neutralise, but required rather more drive than the 47's to keep the efficiency up. With extra drive and 600 volts on the plates, the new pa. was worked continuously at 150 watts during tests,

bridge rectifier on 1200 volt transformer, using 83 tubes, for driver and final stages. This supply delivers 100 mls. at 650 volts and 250 mls. at 1050 volts when required, though the normal drain is about 20 mls. at 700 volts and 90-120 mls. at 1100 volts.

The old 3-stage rig was rebuilt for the contest, so that it could be used for 14 mc. work with higher efficiency. It was changed to a 5-stage job with 24 e.c. c.o., 24 fd., pp. 24 buffer, pp. 59 driver, and the pp. E406 final. The 24 was not found to be very satisfactory as fd., and was replaced by a 47, which gave much better output. The pp. 24's do not give the desired lift in the buffer stage, and these will be changed to pp. 46's at an early date. The input used on the 14 mc. transmitter is about 60 watts, and is obtained from a 600-0-600 transformer, rectified by an 83 and filtered by 6 mfd. of paper condensers. The first stages of both transmitters are fed from one power supply.

Four switches, two for each transmitter, are mounted near the receiver. The filament switches are single-throw, while the H.T. switches are 2-way, arranged to open the primary of the unwanted power supply when switched on.

Keying is effected on the 45 buffer of the 7 mc. rig, and on the 24 co. plate in the 14 mc. rig. Key clicks are eliminated by the use of a tube keying system.

The first receiver used was a 2-valve battery job, with A415 det. and A409 audio. An A442 rf. stage was added after a few weeks, and this receiver sufficed until the time of the Cent. Contest. It was considered necessary to have something giving good C.W. selectivity for contest work if a minimum of time was to be lost due to unfavorable conditions. In view of this an Xtal gate super was built up and was luckily rushed through in a week, and finished at 7 a.m. on October 6. It has definitely proved its worth, and also shows how unstable some of the "T9" signals actually are.

The tubes used are: 6D6 rf., 6D6 osc. cc., 77 mixer, 6D6 1st lf., 6B7 2nd lf., and diode detector, 78 bo. and 27 audi.). A two-tube frequency meter-monitor is also built into the receiver. The Xtal filter is of the matched impedance type, and Hammarlund lf. transformers were rebuilt to do the job.

A great deal of the get-out ability of the station is attributed by the op. to the aerial system used. The original aerial was a 7 mc. half-wave zepp, with 45 foot feeders. This was definitely directional. This was followed by a half-wave 80 mx. current fed arrangement running east and west, 50 feet high at each end, and about 12 feet high at the centre. This was useless on 7 mc., but on 14 mc. proved

itself to be the best aerial which has so far been tested on that band.

A few other arrangements of generally accepted radiators were tested, but results were not very pleasing; no system giving improved consistency or signal reports in DX QSO's until the present arrangement was erected just prior to the B.E.R.U. contests, 1934. This was erected to eliminate the directional properties of previous aerials tried, and also to give a different radiation angle.

Reports from U.S.A. stations immediately jumped about one point, while reports from European and Asiatic stations came up from 2 to 3 points. African stations, whom it had seemed impossible to raise, started to give reports from R4 to R6 under similar operating conditions. These reports refer to 7 mc. operation. Comprehensive tests on 14 mc. have not yet been carried out, though the general impression, given by the few QSO's had on that band, is one of satisfaction.

The aerial is 43 feet high at its highest point. A 33 foot vertical wire drops to within 10 feet of ground. From immediately under this wire three 33 foot wires radiate at angles of 120 deg. in a horizontal plane. The feeders run horizontally from the shack, one joining to the bottom of the vertical wire, and the other to the mid-point of the horizontal wires. The arrangement is thus equivalent to a current fed half-wave 40 metre Hertz.

All-round reports have been very satisfying. During the contest reports of R9 being received from G, VS6, J, and W7, while R7 and R8 reports are very consistent. In the 357 QSO's of the contest, 223 stations reported QSA5, while 302 reports were R5 or better; only 11 R3 reports were received, and only 31 of the 357 reports were QSA3.

## VK 3MR

Transmitter crystal controlled on all bands on frequencies of 7285, 7190 kc. and 14,380 kc., 47 co., 47 1st fd., 47 2nd fd., QCO5/15 buffer, and 852 pwr. amp.; power, 80 watts.

The buffer is link coupled to fd., and likewise to the p.a.; no neutralising is required in buffer, as the screened grid tube is used.

This makes it possible to change from one band to the other, namely, 7 mc. to 14 mc., without neutralising the buffer.

Using a system of switching, it is possible to effect a change in 12 seconds. The system of switching does not introduce any losses into the circuit.

The advantage of being able to QSY in a short space is obvious. This was considerably helped by using two receivers; one on 40 metres and the other on 20 metres. When the 40-metre receiver was switched off, the 20-metre receiver came into play, and by pulling over a DPDT aerial and earth switch, the 20-metre band could be searched, and if anything was there, as it often was, during the test, it was easy to work them, as QSY was only a matter of seconds.

## Receivers.

40-metre, A.C., 78 rf., 78 det., 37 audio, using indoor aerial.

20-metre receiver, D.C., A415 det., and A415 audio. Also special indoor aerial.

Aerial for transmitter consists of a full wave 7 mc. zepp, 51 ft. feeders, series tuned on all bands. Wire, 7/18 x 133 ft. long, 41 ft. high at feeder end, and 102 ft. at free end, running east and west. This aerial is perfect for all directions on all bands.

The transmitter is built into frame 4 ft. x 2 ft. wide x 14 ins. deep, with all controls on front panel; 4 shelves are used and each one can be slid out. Glass sides give a good view of components. Two power supplies—one 83 rectifier delivers 616 volts to the doublers and buffer and 866S delivers 1600 volts to 852. A key click filter is used, and is very effective. Simplex auto key used. All tubes are RCA and Philips.

## VK 3HL

By VK3RH.

To all those short-wave enthusiasts who during the past decade have donned a pair of cans, VK3HL—otherwise Allan T. Hutchings, of "Bryn Avon," Callawadda—needs no introduction. Even less does he require an introduction to those Hams who have taken part in any DX contests during a similar period, for, although the Centenary Handicap is the first major trophy which Allan has landed, with the exception of a Yank contest in 1931, for which he only received some attractive wall-paper, he has given his fellow-contestants no little anxiety, and in many instances a helluva fright.

VK3HL first pushed a hole in the 300 metre band as plain, ordinary 3HL, away back in the dark ages before the era of prefixes, sales tax, and scanties. On the wall of his shack his station licence, over the faded signature (combination of literary style and crook departmental ink!), of our past, present, and future friend—one J. Malone, R.I., testifies that this was in January, 1923.

Allan began his activities in radio under the parental roof-tree with the usual Hartley rig, fitted into an imposing panel array. The receiver, a 3-tube affair, was similar in size and possessed a change-over switch which even to-day would do justice to the Yallourn power house. H.T. was then obtained from the 32 volt house lighting plant, via a motor-generator, but

this has since been replaced by a more efficient 100 watt dynamotor.

After some years of operation under these circumstances, 3HL began to feel somewhat sympathetic towards his tubes, for with his mother (now VK3HM), and his sister Marjorie (now VK3HQ), showing more than passing interest in his hobby, he felt that the transmitting glassware couldn't be expected to stand 24-hour operation in three shifts, so he said good-bye to the old shack and its memories, and pitched his tent—a very substantial and comfortable one—a stone's throw away, and at the same time espoused himself to the girl of his dreams. In no small way has his "better half" been responsible for Allan's success in his hobby, due to the interest and sympathy she has shown with his work, and particularly in "keeping the eats up to him" during his strenuous contest work. Other YF's please note!

The usual Ham's cherished desire—WAC—was earned in 1928, and to date more than 50 countries have been contacted, and, perhaps more interesting still, over 1000 Yanks.

Now to get along to the technical side of things, we'll take the transmitter. The present rig is a thing of beauty and a joy—I almost said "forever," but nothing stays put forever in a real "Ham's" shack. As will be seen from the photo, it takes the form of an aluminium panel built up on a



framework of oak, and a mottle finish gives it a really striking appearance. The design is such that all leads are reduced to a minimum, and thus the almost impossible has been achieved—efficiency and appearance in combination. Although only three tubes are in use, the transmitter was designed to use four tubes ultimately, and in the following order: TCO/5 as CO, TCO4/10 doubler, QCO5/15 buffer (or doubler on 20), and either QCO5/15 or TCO5/25 final amplifier. During the recent contest, however, a PM24B was used as CO, E406 doubler, and E406 in the PA, with an input of 23 watts.

The receiver is a recently built 6-tube super-het, using 2 volt battery tubes, and is built around a 1A6

rangement gives a decided directional effect, although not reducing signal strength too much in a sideways direction.

Compared with a half-wave horizontal aerial, DX reports indicated that the beam system increased signal strength in U.S.A. by 2 points, while the Japanese reports revealed no drop in strength, as might have been expected. Two of these directional arrays were used in the contest, one focussed on U.S.A., and the other on Europe, and in this manner, with a reduced input of nearly 50 per cent., reports on signal strength were similar to those usually obtained with the old aerial and normal power. This fact probably won the contest for



Alan Hutchings VK 3HL and his gear

mixer, 2 34's in lf., PM1HL detector, 30 in beat oscillator, and a 33 output tube feeds the dynamic speaker. The job is an all-wave affair, using 2 separate 2-gang condensers—a .0005 for the B/c. band and a .00005 midget for the "Ham" bands—which are, of course, band-spread. The signal strength to noise level is particularly fine.

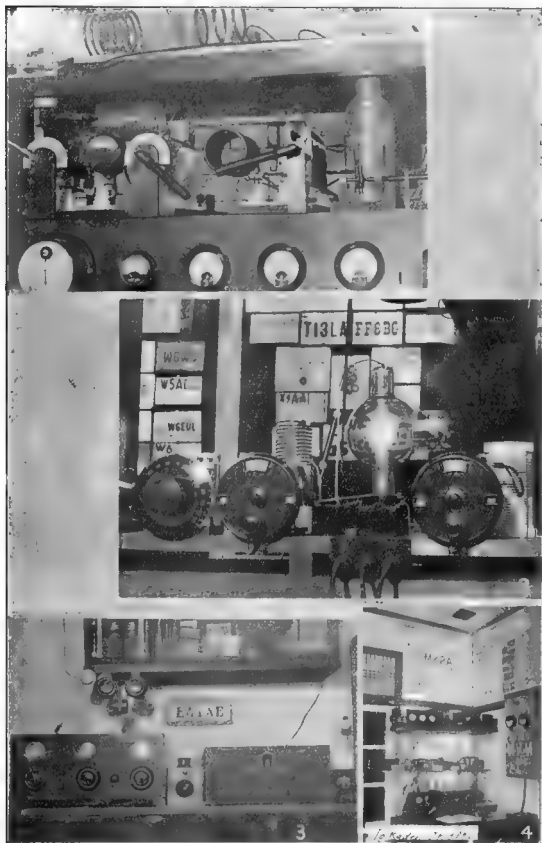
And, lastly, but by no means least, we come to the aerial array, a factor which, in the opinion of the writer, contributed very little less than the man himself, to the winning of the handicap. Most Hams will probably be surprised to learn that it is a beam affair, and that it is a beam which ACTUALLY works, and at the same time is relatively cheap. Two second harmonic radiators are arranged in the form of a V, being fed at the apex by the usual zepp feeders—three-quarter wave in this case. The angle of the V is 80 degrees, and this ar-

VK3HL, and is an excellent illustration of the platitude that "Brain counts more than brawn," just as much in amateur radio as it does in a brawl.

All Hams will undoubtedly join with me in heartily congratulating VK3HL on his recent success, and in wishing more power to his keying arm in the future.

## COUNTRY PHONE STATIONS.

All country stations on broadcast band desiring to continue must apply both to the Dept. for permit and Allocation Officer for allocation, before March 15, otherwise no consideration will be given,



1. D 4BIN

2. D 4BIN

3. EA 1AE

4. MX 2A

## Amateur Radio Federal Convention

The Annual Federal Convention was held in Hobart from January 26 until January 31. Four Divisions sent delegates, while the most distant—Queensland and Western Australia—were represented by proxy. The various representatives were: G. B. Ragless, VK5GR (Acting Federal Secretary); W. M. Moore, VK2HZ (A.R.A., New South Wales); J. G. Marsland, VK3NY (Victoria); J. N. O'Dea, VK2FQ (Queensland); W. S. Pitchford, VK5WP (South Australia); W. T. Hooker, VK7JH (Western Australia); H. M. Moorhouse (Tasmania); and F. Wells, VK5BR (Secretary to the Convention). Quite a lot of time was spent on the business side of the Convention, four nights and one afternoon being taken up, and, as the official minutes are to be published in our next issue, I will not mention business, but will concentrate on a description of the social side.

Bill Moore and Jack O'Dea went direct from Sydney to Hobart, while the remaining interstate men, Gordon Ragless, Bill Pitchford, Forde Wells, and Jim Marsland, went from Melbourne via Launceston, arriving in Hobart on Saturday afternoon, January 26. Upon arrival, the latter party were met by the Hobart gang, and, after light refreshments, were taken to the shack of the Grand Old Man of Tasmanian radio—"Pop" Medhurst, VK7AH—where they made the acquaintance of the two Sydneyites. VK7AH has a collection of gear dating back to the days "when Adam was a boy," and has been on the air since 1901.

The first item on the Convention programme was a dinner, which was attended by some fifty members of the Tasmanian Division, and representatives of the P.M.G.'s Department, Broadcasting Stations, and allied societies. We were not allowed to sleep off the effects of the dinner on Sunday morning, as a field day had been arranged, and all cars left the Institute rooms at 9 a.m.. This field day was a tribute to the organisation and enthusiasm of the Tasmanian Division, as no less than fifty-three members were present. The transmitter party, 7AR, 7JB, and Tom Allen, 2nd op., 7PA, left early, and the remain-

der were distributed over twelve cars, all equipped with D/F receivers. The transmitter came on the air at 10 a.m., and 7WR and party located it at 10.30, with 7CW three minutes behind. The next car arrived at 11.40, and the others at intervals up to 1 p.m. After lunch, a cricket match was played, and resulted in a draw.

On Monday morning, the visitors inspected Tattersalls, and have great hopes of installing 852's and S.S. Supers as soon as the next consultation is drawn. They were then shown some of Hobart's wonderful views; there is no doubt about it, the scenery over there is magnificent. In the afternoon the party visited the Cascade Brewery, and had a very interesting afternoon—by "interesting" I mean that it was not dry. Jim, 3NY, took some photos, inside the Brewery, but the negatives show three of everything. He says that he moved the camera, but the boys think that his camera is an extraordinary one, in that it takes photos, exactly as the owner sees things. Hi! Jack, 2FQ, had great difficulty in leaving the place, and is thinking of becoming a barman.

On Tuesday morning we were conducted through the works of Cadbury-Fry-Pascall, and sampled some of the products. Bill, 2HZ, is considering the possibilities of a position there, feeling that a chocolate diet may be beneficial—he is such a little fellow, and weighs only 16 stone. In the afternoon, the Automatic Telephone Exchange and 7ZL Station and Studios were inspected.

The final visit of inspection was to the Electrolytic Zinc Works on Wednesday morning. The power station there is really remarkable, and has a wonderful collection of meters, the one which interested the boys most being a vibrating reed instrument for measuring the frequency of the A.C.

I could fill the magazine with a full account of our doings in Hobart, but, unfortunately, that can't be done, but, before closing, I would like to thank the Tasmanian Division for their hospitality to the visitors, and compliment their Secretary (Mr. Bert Moorhouse) for his organisation of the Convention programme.

# Operating and Experimental Section

Conducted by VK3WY.

Up to the time of writing the main feature of this month has been the first part of the H.E.R.U. contest. Conditions prior to the contest had been rather patchy, but we had been hoping that they would clear up OK for the contest. During the first part of the contest, however, this was not the case. As a matter of fact, I think that conditions were definitely poorer than we have had them for some years. This seemed to be particularly the case in VK3 and VK6, though I believe that VK2, 4 and 6 fared better. At any rate, they could be heard working DX which we could not even hear here.

The following is a rough summary of conditions on the various bands. I should say, however, that this applies mainly to VK3, as I have not received any definite information from the other States.

**3.5 mc.**—QRN is rather fierce on this band at present, but I have heard of several early morning contacts with European stations, which looks decidedly promising for the possibilities of this band in the near future.

**7 mc.**—This band does not appear to be as good as during the previous month. QRN has been rather prevalent during the nights. After 2100 the W1, 2 and 9 stations are coming through well, and can be worked until well after midnight, which looks well for the Yank contest in the near future. ZL sige, are strong in the early evenings, and later on the usual KA, OM, J, and occasional VU sige, may be heard. The early morning DX on this band is not as reliable as last month. European DX may still be worked, but it takes a lot of raising, and appears to be getting weaker each week now.

**14 mc.**—DX is still very patchy on this band, but the patches are decidedly good when they do come. At night, HC, HK, CX, and European stations may be worked. CX, J, CG, is still one of the most consistent stations on this band.

## 14 mc. DX IN VK2.

2BA, of Chatswood, has spent a considerable amount of time during the past two months studying conditions on 14 mc., especially from a DX raising point of view. In between periods at sea and periods listening, 2BA worked on 14 mc. during January and first few days of February the following prefixes:—SP, PAO, VU, FB, J, G, OE, W, CX, OK, SU, ZC, VS7, ZB, OH, F2, YL, SU, I, FM4, ZS, HB, EA, PK, EI, VSR, SM, AC, YR, ON, U9, P, VSR, YU, OA, and ZL. 2BA is situated in a position especially suited for 14 mc. DX. Outside those prefixes already shown as worked, the following were also heard: PY, VP5, VP4, K5, KA, F8, VS3, FM8, PJ, LU, OZ, VQ4, LY, P7, HC. A total of 51 countries. None so bad for a period of just over a month, and ten days of that at sea.

2BA submits as a DX chart for the next two-three months the following:—

South America—CX, CE, HC, LU, PY, etc., 1700-2100 SMT.

Europe—All countries, 2000-0100 SMT. Africa—ZS, ZU, SU, FM8, FM4, etc., 1600 and 2100-2400.

North America—VE, W, X, 1430-1730, 2400-0200, and 0500-0800.

Asia—1700-2000.

About May the Africans and Europeans will disappear at night, and possibly may be worked from 0700 to 0830, while the North Americans will come through from 1100 till 1800, and South Americans from 1400 till 1700 SMT.

## 7 mc. DX CHART.

1700-1900—W, VE, X, HP, K5, VP, and occasionally Southern America.

1900-2100—W, VE, KG, KA, J, AC, and Oceania in general.

2100-2300—W, VE, KC, VU, VS, J.

2300-0100—W, VE, VS, and Asia in general.

0100-0300—W, VE, V, V1, Asians, and scattered Europeans.

0300-0500—FB, VS, CR7, VQ8, VQ4, ZS, ZU, J, and XU.

0500-0700—FM8, FM4, and Europeans in general.

0700-0800—Scattered Europeans and VU, VS, OM, and J.

## 28 and 36 mc. Section

Conducted by VK3JJ.

January and February brought a complete change in 28 mc. conditions, and interstate signals only penetrated on two or three occasions. As usual, VK4BB had the best run, and during the short improvement noticed on Jan. 27, VK3BW, 3NM, 3WL, 3OF, 3BQ, 3HK, 3JO, 3KD, 3MY, and 2LZ were heard, the first three being worked. On the same day, 3BW and 3OF were QSO both 2HY and 2LZ.

VK6SA reports conditions even worse in W.A., no signals at all being heard. He has been keeping a constant watch, but 6MN, 6CI, and 6RA, who are the only other VK6's interested, have not been active.

Unfortunately, all points scored in the first two days of the VK3 28 mc. contest were obtained from local contacts, not a single interstate signal being heard. The following VK3's were active:—3NM, 3WC, 3ML, 3OF, 3BW, 3KD, 3WX, 3PX, 3BQ, 3JZ, 3XK, 3JX, 3OC, 3JO, 3HK, 3WL, 3FM, and 3JJ.

VK3BW only recently started on 28 mc., and although located about 35 miles across the bay, no trouble is experienced in working most of the Melbourne stations. An 800 doubler driving a screen grid QB2/75 P.A. is responsible for the hefty signal, the last stage giving slightly better results when neutralized.

Most of VK4BB's results this season have been obtained with a 210 TNT Xmitter, running with about 25 watts input and coupled to a half-wave 7 mc.

Continued on Page 23

## Divisional Notes

### Victorian Division

#### KEY SECTION NOTES.

By PETER H. ADAMS (VK3PX).

The usual monthly meeting of the Key Section was held at Institute Headquarters on February 4, 1935. There was an average attendance of thirty members. As VK3RJ was away on a fishing trip, no QSL cards could be distributed, but a letter from him was read, in which he advised that all cards would be posted out in due course. VK3JJ gave a report on 38 mc. conditions, which have been consistently poor for the past month, and only local QSO's have resulted.

A visitor, W2DUM, from Long Island, New York, arrived during the course of the meeting, and was received with acclamation.

VK3OX, who occupied the chair, stressed the need for short talks or lecturettes at meetings, and was supported in his remarks by the secretary, whose suggestion of putting the names of those present at each meeting in a hat, and drawing for the lecturer to give a talk on some subject of interest at the following meeting, was also favored by VK3UK.

At the conclusion of general business, VK3PX delivered a lecturette on an improved system of Telefunken modulation with which distortionless 100 per cent. modulation can be obtained using a 55 diode triode tube as a modulator. This appeared to arouse quite an amount of interest, and the lecturer was thanked in the usual manner.

After this, W2DUM proved that he was not so "dumb," by giving a most interesting talk on conditions in the States. The questions asked him by the gang were numerous and varied, and if a few went home wearing a look of discontent it was simply because of W2DUM's casual remark that 210's were obtainable in the States for "about 2/6"! He is only passing through Melbourne, but hopes to be back in a couple of weeks to look over some of the ham shacks here before he goes away.

#### VKS PHONE SECTION NOTES.

By J. R. KLING, VK3JB.

There was a good attendance at the last phone section meeting, held on Tuesday, January 29, 1935.

3BY did not apply for an allocation, as he had the bad luck to have his aerial system blown down during the heavy storms we have been having lately. Many listeners have missed this fine station on the air lately, and we sincerely hope that he will be back on the air again soon.

Applications for allocation were received from the following stations:—3DH, 3FA, 3LN, 3LU, 3BH, 3JB, 3AM, 3GY, 3JR, 3RI, 3FW, 3HK, 3OY, 3ZO, 3CB, 3CR, 3HF, 3GK, 3KE, 3SB, 3FY, 3OV, 3BT, 3XL, 3LM, 3TM.

During the month information was received that stations within five miles radius from 3AK would not be allowed to operate while 3AK was on the air, and the stations affected by this ban were:—3BT, 3OY, 3OV, 3TM, 3KE, 3XL, 3CR.

We sincerely hope that some amicable arrangement will be able to be made at the next meeting that will be of benefit to these stations that have had to stay off for two Sundays.

#### SHORT WAVE NOTES.

20—VK3XJ.

The short-wave meetings have been fairly well attended during the last few months, and new members have been coming along every meeting. Mr. W. G. Sones gave a very interesting lecture on frequency measurements at our meeting on February 13, and also another lecture on anti-noise aerials, particularly the R.C.A. antenna, on February 27.

A visit of inspection is being arranged for the group to visit the new studios of 3AW early in March.

Observations of the German short-wave transmissions to Australia are still being maintained by members of the group, and these reports are being supplemented by country listeners to whom we owe our thanks.

The new 270 degree short-wave condenser which has just been released appears to be gaining favor with the members, and it may also interest the transmitting members of the Institute if they investigated these condensers from a transmitting viewpoint.

Next meeting is to be held on March 13.

#### WESTERN DISTRICT NOTES.

3HG—3OW.

Owing to the relative inactivity of this station, news from this district is rather scarce. Conditions also appear to be very patchy, with very heavy QRN almost every night, and little work of interest has been done. The best DX work is probably 3CQ's contact with D4BAR on 8.5 mc. This is a remarkably fine piece of work, and shows that DX can really be raised on 3.5 mc. 3JA has been active during the week-ends, using 18 watts on a single E406. 3XI was active a month or so ago, but seems to have disappeared again. The newcomer, 3WW, is on the air quite a lot, but as yet his note is not the best. Another newcomer is 3OR, ex 2RR. He is using 1.5 watt phone on 3.5 mc., and comes in here R3. His antenna is a doublet, and he finds that it peaks sharply on 3800 kc. Rob will be increasing power soon by means of a vibrator and transformer, stepping up the 32 volts from the house lighting batteries.

Quite a number of stations are back on 8.5 mc. phone, and in a month or so this band will regain its popularity for local "ragchews."

## Victorian QSL Bureau

### Notes for March

Cards are on hand at the above Bureau, 23 Landale Street, Box Hill, for the undermentioned stations, and will be forwarded on receipt of postage:—VK3AX, BB, BF, BL, CF, CM, DD, DK, DQ, EM, ES, EG, FC, FG, FZ, GJ, GM, GU, HE, JK, JZ, KG, KY, KQ, LP, LT, LY, MX, NM, OF, OU, OZ, PC, PZ, PL, FW, QJ, RQ, RW, SP, SK, VU, WN, XK, XF, YL, ZL, ZR, Messrs. Hecker, Adams, Carey, Sims, Kelly, Bennett.

The 1935 R.E.F. (France) Cup Contest takes place between 0000 GMT, March 24, and 2400 GMT, March 31, 1935. The contest consists of contacting amateur stations in France or French Colonies. Only one contact with each French station is allowed, and a code word chosen by themselves must be exchanged. The self-chosen five letter code word must be changed for each contact. Each contact counts 1 point, and entries must reach the R.E.F., 17 Rue Mayet, Paris, 81eme, not later than May 19, 1935. Reports should give the following:—Name, address, call sign, input and total score, and each contact should be set out giving date, GMT, call, codes and frequency band. The leading station in each country will receive a diploma and free subscription to "Radio R.E.F." Further details to those interested from this Bureau.

Supplies of log sheets and rules for the B.E.R.U. Contest are on hand, and may be secured from the B.E.R.U. Rep., VK3OC, or from this Bureau.

### A.R.R.L. DX Contest, 1935.

W9FO will give a prize of a new call book to the first VK station working him in the March, 1935, DX Contest. W9FO uses the following frequencies: 7056, 7286, 14092, and 14384 kc.

—R. E. JONES, QSL Manager, VK3RJ.

## Association of Radio Amateurs

### NOTES FROM HEADQUARTERS. A.R.A. (N.S.W.).

By 2HZ.

2OJ, A.R.A. zone officer, was a recent visitor to Sydney, likewise ex ZO, 2PN, who has been spending a few days at Manly.

The A.R.A. are very pleased with the happenings in VK7, at the Annual Convention. The fact that the Federal Headquarters has come to N.S.W., means more work no doubt, and as for the forthcoming year, a very definite plan of action has been mapped out for the A.R.A. Things should simply shoot along.

The second annual dinner promises to be a wonderful affair, and should be exceptionally well attended.

2FQ and 2HZ were given a wonderful time in Tasmania, and wish to thank the Tasmanian Division and its members for the trouble they went to in entertaining them.

The B.E.R.U. Test is fairly well supported in N.S.W. 2NS and 2LZ should be scoring well, although conditions over the final week-end of the senior seemed very poor. 2XV, of the A.R.A., and one of its most solid supporters, has

journeyed to Brisbane to a "B" class station. N.S.W. over the last year has lost three of its best DX stations to "B" class stations—namely, 2AH, 2ZH, and 2XV.

### ZONE 3 NOTES. ZO—VK2OU.

As VK2XO is QRL, these notes will be compiled by VK2OU, until Crief is free again. So would any Zone 3 stations please drop me a line occasionally to let me know what they are doing.

The two most important happenings this month were the interzone contest and the 6-point relay. The former was a great success; everyone said it was FB, and wants more. No Z8, Z7, or Z6 stations were heard here, and Z4 stations came through rarely. VK2NP was always on the go, and should have a very good score. VK2KR likewise. VK2OU was the only Z3 station as far as I know.

VK2AO is rebuilding, and hopes to be on again soon. VK2CU says that ham radio is a thing of the past with him. VK2GM uses a 443N in a TPTG, and is on 80 and 20. VK2NY is tickled pink over a QSL he got from EAR. He is using a MOPA with two buffer doublers and PA, and a new A.C. 3 tube receiver which he says is going very FB. VK2SL and VK2WS are on 80 when QRN permits. VK2GS is at VK2WS QRA. VK2XO has been batching. Uses grid mod. and tells me that he gets good results. VK2ZN paid the Clarence a visit; but did not get to my QRA. Sorry to have missed you, Bill OM, but hope no QRM next time. I cleaned out the shack especially for you, too. VK2GI says that by the time he has finished rebuilding, 80 mx. will be booming again, hi! He is talking about visiting V18 early in Jan., so he may look some of the gang up again. VK2ZM is down on 40 mx., and I think I heard him using fone after dark. How come, Jim? He is experimenting with a new PA, which seems to go FB.

### ZERO BEAT RADIO CLUB. (Affiliated with the A.R.A.)

The Z.B.R.C. are running during March a "Sylvania" transmitting contest. This contest is open to all A.R.A. (W.I.A.) members, and its affiliated bodies, also Z.B.R.C. members in other States. A 242A and a receiving tube are the prizes in the transmitting section. These tubes have been donated by Mr. Carey, of Tyme Radio Ltd. Full rules can be obtained from secretary of Z.B.R.C. A receiving contest is also being run at the same time, 1, 2, 1 Sylvania tubes being 1st, 2nd, and 3rd prizes respectively.

### ZONE 1 ZO—VK2OJ.

Two new hams have just received word of their success in passing the A.O.P.C. No call signs are allotted them as yet, but these should be known very soon.

2YI contemplating fone with Helsing modulation.

One of 3EG's 66 rectifiers has gone west, and his note is temporarily DCX, with pronounced ripple.

2OJ just back from the mountains, and feeling fit for many hours in the shack, but notes are a bit scarce.

## Queensland Division

By VK4RY.

The monthly meeting of the Wireless Institute was held at headquarters, Heindorff House, Queen Street, Brisbane, before one of the largest attendances for many months, on Friday, February 1.

During the evening a lecture was delivered by Mr. P. Kelly, on "Radiation and Directional Antennas." This was well received and caused much discussion.

On Sunday, February 3, success on 56 mc. was achieved. The experiment was a two-way phone communication between a monoplane flown by Bruce Munro, VK4AL, and a moving car containing other members of the W.I.A.

This is the first time that duplex radiophone contact on 56 mc. has been achieved in Queensland. It is proposed to make similar tests at an early date between two moving planes.

The new class for the A.O.P.C. will commence the first week of March, and intending members are requested to interview the secretary between the hours of 1 and 2 p.m. on Monday, Wednesday, and Thursday, at headquarters, or write to Box 1524V, G.P.O., Brisbane.

**T.D.S. Section.**—Any person interested in five metre work will receive every assistance from the T.D.S. Section of the Institute, as listening posts are required throughout the City. It is also interesting to note that several amateurs in Ipswich are building gear for the ultra highs, to assist our activities in this band.

## South Australian Division

By ERIC HALLIDAY.

Conditions in VK5 up to 20/2/35 have been excellent for DX, both on 7 mc. and 14 mc. Many of the locals have been working G's and other Europeans galore.

5RX is using a two-stage tritet, with a single wire feed matched impedance aerial. On a recent night he worked five G's without having to use CQ once, being called by all five. 5GL is the call of Clem Tilbrook, of Brighton Rd., Brighton.

5MY recently received his W.A.C. certificate. Harry has been interested in the 28 mc. band of late. Had a bit of trouble in finding the band on his receiver. Still uses a tritet on 7 mc. and 14 mc. 5KL now has a four-stage crystal rig built, and has no difficulty in working DX. 5MW recently got his limited certificate. The 200 m. transmissions from this station are getting out well; plenty of interstate reports are being received.

## West Australian Division

The W.I.A., W.A. Division, has had a busy time of late dealing with Convention matters. Owing to late arrival of agenda items from headquarters, the Council were hard pushed to ar-

range for a proxy and get their views across to VK7.

Great praise is due to our energetic secretary, 6CX, in his expeditious handling of the business.

Most of the gang's activities at present consist of bumper outings arranged by the social committee. The latest was a trip to Penguin Island, and was an outstanding success.

The gang will be interested to know that three new calls will shortly be added to the list of VK6. The latest to pass their exams. are J. Gollard and R. Collis. Congrats, boys!

6LJ, who recently resigned from the Council on account of stress of business, has now been through a serious operation for appendicitis, but is now on the way to recovery. The gang wish him a speedy return to health.

6RT has been transferred from Greenough to Bellavista, but as there is no power supply there, will still have to stick to his "Lizzie" coil rig.

6BN and JS are at present engaged in finishing off the students for the next exam., and hope to put some more VK6's on the air. Guess we could do with some. "What do you say, Easterners?"

6KB now on xtal, and working a matched impedance aerial using four-inch spacers. Also experimenting with wire is 6CF, but having no flex decided to try inch spacers. So far the results have been very good, considering the condition of the bands at present.

VK6 has been very favorably considered in the drawing-up of zones, and now has quite a good chance of putting themselves on the map. As the power used by most VK6's does not exceed the 25 watt limit, some of our boys should get on well in the Junior Section.

## Tasmanian Division

By 7PA.

(Hon. Sec., H. M. Moorhouse, 95 Arthur Street, North Hobart.)

The February meeting was held on Tuesday night, the 12th inst., having been postponed from the previous Tuesday owing to it being a local holiday—Hobart's big Henley or Regatta Day, as you please.

General business was attended to and a discussion held re finance, and, owing to our financial position, it was deemed necessary to take some action to collect outstanding subs., which, unfortunately for such a small division, are rather large; should these be paid in this division would be in a very bright position. See to it, chaps!

This matter was put into the hands of the Executive Council to act on.

At the end of the meeting, VK7WR—Bill Nicholas—gave a lecture on "A," "B" and "C" class amplifiers, which was much appreciated by all, and Bill was greeted by a hearty round of acclamation at its conclusion. It is our aim to promote more of these lectures from time to time.

Members are reminded that the first Tuesday in each month is still the regular meeting night unless otherwise advised.

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# R.A.A.F. Wireless Reserve Notes

## RESERVE NOTES, 3rd DISTRICT. VK3UK—3ZI.

Owing to the B.E.R.U. Contests being spread over the four week-ends of February, as usual this month of the year has been one, in VMC, in which no fresh ground has been broken. As 3ZI and 3Z2 were actively engaged in the contests, and many members were entering as well, 3ZI took a vote to see if the remaining stations would prefer a suspension of schedules, or whether they would continue section working for the period. They unanimously decided on a continuance of schedules, a fact which speaks very highly for the spirit prevailing in the district.

3DI was heard very frequently during the contest period, and, like 3ZI, must have lost a lot of sleep. This station, 3DI, is to be congratulated on his wonderful showing in the Centenary Contest, and through bad luck only was beaten for first place in the open section. 3B3 also deserves the highest praise for his magnificent effort in winning the handicap section. Alan was in Melbourne a few weeks ago, and from all accounts the tubes he will get for the handicap prize form such a bewildering array he will be hard put to evolve a circuit that will include them all. In any case, he will probably have a few spares. So remember, VMC members, when you need to borrow a tube, 3B3 has plenty!

3B5 has made a welcome return to activity again, and was heard during the contest period on more than one occasion. He should put out a glorious "wallop" on 3.5 mc. with his new RK-20. Ex 3C4 is doing very well in the

R.A.A.F., where he is doing his "A" course for a short-term commission. To quote from a recent letter, he says: "... am at present endeavoring to master steep turns — have managed landings, take-offs, and turns quite OK—strange to say, as soon as I arrived down here they recognised me as a Code man." Apparently we traffic men form a select (?) and easily recognised species of the homo sapiens!

3D4 spent a few days early this month in VIM. He must have been particularly busy, because we, unfortunately, saw nothing of him. VK3GC is returning to his old QRA at Camperdown, and will be shortly active again. It won't take him any time to get into the swing of reserve schedules and VMC will be very glad to have him as an active member. There is one class code man in Victoria who is not a member of VMC. He is a "speed merchant" and DX man par excellence. It need hardly be said that his call is VK3EG. VMC prides itself on the fact that practically every crack operator and DX man is in the ranks, so drop him a line, VMC men, and get 3EG into the fold!

3D6 is unfortunately still away after her illness. This is this station's first absence from schedules, except during holiday periods, for about five years. We all wish her a speedy recovery, and a quick return to active work again.

It is with the deepest regret that we hear of the death of VK3CD's father. This station, 3E1, has always given valuable assistance at the reserve annual portable station at Deniliquin, and we extend our deepest sympathy to him in his sad bereavement.

## Continued from Page 18

zepp antenna. A 4-stage C.C. rig with 210 final doubler and 50 watts input has been used at times, but the efficiency is fairly low even with link coupling.

Electron coupled detector receivers seem to be getting popular, the new one at VK3NM increases signal strength by two points, and employs a 77 det. and 37 audio.

ON4AU has further increased his 28 mc. score by working W9TJ, and will be calling every day for 15 minutes at 1210 and 1315 GMT on 28 and 14 mc. simultaneously.

Experimental work on 56 mc. has been making rapid strides in the U.S.A. recently, new developments being the introduction of simple beam antennas and practical super-het. receivers. It is found that beam antennas increase the range of the ground wave to such an extent that distances between 50 and 150 miles are being worked with remarkable consistency and low power from the usual ham locations. There is still much to be solved, and many improvements to be made in 56 mc. gear, but we VK's will have to make concentrated efforts very soon if there are to be any investigations left for us.

Probably the greatest distance accomplished in VK on this band was the reception by VK2XY recently of phone

and ICW from VK2CG. Signals from 2CG were received over 65 miles away on a portable 3-tube super regenerative receiver with 6 feet of wire as the aerial.

In Vic. 56 mc. activity seems to be increasing, and VK3RS and VK3KQ are again testing on this band. VK3KW of Geelong, and 3BW, are also interested, and will no doubt assist in any experiments arranged among Melbourne stations.

## NEW SOUTH WALES NOTES.

Owing to the continued hot weather and the swing in favor of the surf as opposed to ten meters, the N.S.W. hams have been on in spasms only. VK2LZ and VK2HY hold the honor for the most continuous operation. The country stations report nothing heard. VK2HZ, 2XY, 2NO, and 2YC have been active, but have had to be content with the usual old-time local QSO's.

Looking back over January and February, one is regretfully inclined to think that our old ten mx. conditions have returned with the more normal weather, and from now on only constant watch on the band will produce results. Would it be possible to draw up a roster of times for each ten mx. station to be on during these slack week-ends?—VK2YC.

## CIRCULAR RE RECORDED ITEMS.

The Institute is taking this matter up on behalf of all members. You will therefore please refrain from any individual action.

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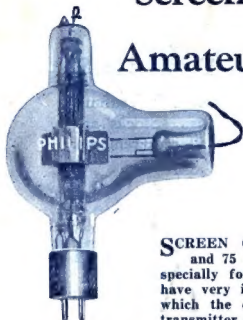
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Table A shows the various electrical properties of the Philips amateur transmitting valves:—

### CHARACTERISTICS:

Table A. Type.	Screen Grid Valves	
	QC 05/15.	QB 2/75
Filament Voltage .....	4.0	10.0
Filament current* .....	1	3.25
Saturation current* .....	400	2,000
Anode voltage .....	490-500	2,000
Screen grid voltage .....	75-125	300-500
Max. anode dissipation .....	15	75
Anode dissipation on test .....	20	100
Max. screen grid dissipation .....	3	15
Amplification factor* .....	225	200
Mutual conductance (slope)* .....	1.4	1.4
Int. resistance* .....	160,000	150,000
Anode-grid capacity .....	.001	.02
Max. diam. of bulb .....	50	100
Max length .....	160	210

\*Approximate values.

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